Rule CIC325: Shared temporary data list structure was out of space

Finding: The CICS Shared Temporary Storage Queue Server statistics showed that the shared temporary data list structure was out of space.

Impact: This finding has a MEDIUM IMPACT or HIGH IMPACT on the performance of the CICS region.

Logic flow: This is a basic finding, based on an analysis of the data. The finding applies only with CICS/Transaction Server for OS/390 or for z/OS.

Discussion: Shared temporary storage queues are stored in named pools in an MVS coupling facility. A shared TS pool consists of an XES list structure, which is accessed through a cross-memory queue server region.

If a task tries to write to temporary storage and there is no space available, message **DFHXQ0442** (*CF structure strname request failed, structure is full*) will be issued. The failing request is given a NOSPACE indication if it originated from a CICS API request. CICS normally suspends the task (although the task can regain control in this situation by using either a HANDLE CONDITION NOSPACE command, or the RESP or NOHANDLE option on the WRITEQ TS command). If suspended, the task normally is not resumed until some other task frees the necessary space in main storage or the VSAM data set.

If the task attempted to write to a shared temporary storage queue on the coupling facility and there was insufficient space to satisfy the request, the request to write to a shared temporary storage queue is retried every half second. This delay and retry is in anticipation that (1) automatic ALTER processing might make space available, or (2) other tasks release (delete) queue entries and make space available.

This delay can produce unexplained and elongated response delays, especially if the waiting task owns exclusive-use resources, in which case all other tasks needing those resources must also wait.

Shared temporary storage queue server statistics for the coupling facility are available in MXG file CICXQ1. CPExpert uses data in CICXQ1 to determine whether a Structure Full condition occurred. CICXQ1 variable S1RSP7CT (List structure out of space) indicates that the list structure was full.

CPExpert produces Rule CIC325 when the number of Structure Full conditions is greater than the value specified by the **TSNOSPCE** guidance variable in USOURCE(CICGUIDE). The default value for the **TSNOSPCE** is 0, indicating that CPExpert should produce Rule CIC325 whenever any Structure Full conditions occurred.

Suggestion: If this finding is produced, you should consider the following alternatives:

- Any queues which are no longer in use should be deleted so that the space can be reused.
- Review the *Automatic ALTER parameters* to determine whether these parameters provide sufficient control over the conditions under which the TS server attempts an automatic ALTER action when the structure becomes nearly full.
- If the structure is not at its maximum size, it may be possible to start an ALTER request to increase the size using the MVS SETXCF command.
- Review the POOLSIZE parameter to determine whether this parameter is less than the value specified for the structure in the Coupling Facility Resource Management (CFRM) policy. Increase the POOLSIZE parameter if appropriate.
- Review the STRUCTURE parameter and INITSIZE parameter in the CFRM policy to determine whether these parameters should be increased.
- Change the TSNOSPCE guidance variable in USOURCE(CICGUIDE) so Rule CIC325 is produced only when you wish to be aware of a larger number of Structure Full situations. This alternative is **not** recommended! You should always be aware of Structure Full situations.
- You can “turn off” the rule using the process described in Section 3 of this User Manual. However, this alternative is **not** recommended! You should always be aware of Structure Full situations.

Reference: *CICS/TS for OS/390 Release 1.1*
CICS System Definition Guide: Section 3.4.3 (Defining TS server regions)

CICS/TS for OS/390 Release 1.2
CICS System Definition Guide: Section 3.4.3 (Defining TS server regions)

CICS/TS for OS/390 Release 1.3
CICS System Definition Guide: Section 4.2.2 (Defining TS server regions)

CICS/TS for z/OS Release 2.1

CICS System Definition Guide: Chapter 21 (Starting a TS server region)

CICS/TS for z/OS Release 2.2

CICS System Definition Guide: Chapter 21 (Starting a TS server region)

